Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims:

Claim 1 (currently amended): An analytical device comprising an electrochemical cell and a sample containment device,

said electrochemical cell comprising:

an anodic reservoir adapted to receive an electrolyte;

a cathodic reservoir adapted to receive an electrolyte;

a connection between said anodic reservoir and said cathodic reservoir for permitting communication of electrolyte from at least one of said reservoirs to the other of said reservoirs;

a first bubble-free electrode having been precharged as a cathode to have hydrogen absorbed therein, and the bubble-free electrode being disposed within one of said anodic reservoir and said cathodic reservoir;

a second electrode disposed within the other of said anodic reservoir and said cathodic reservoir;

a power source having a positive terminal ~~that is normally~~ in electrical contact with said first electrode, and a negative terminal ~~that is normally~~ in electrical contact with said second electrode, said electrochemical cell operating in an electrolytic mode and generating an electrical field when said power source is turned on ~~and said cell is operating in a normal mode of operation~~; and

a power source polarity inverting device for switching the contacts between the terminals of said power source and said first and second electrodes such that said negative terminal is in electrical contact with said first electrode and said positive terminal is in electrical contact with said second electrode;

said sample containment device comprising a sample containment chamber, said sample containment chamber including an opening for introducing a sample into said chamber and being positioned with respect to said electrochemical cell such that an electrical field generated by said electrochemical cell can influence at least one property of at least one component of a sample disposed in said sample containment chamber.

Claims 2-4 (canceled).

Claim 5 (original): The analytical device of claim 1, wherein said second electrode is a bubble-free electrode.

Claim 6 (original): The analytical device of claim 1, wherein at least one of said first and second electrodes comprises a palladium metal material.

Claim 7 (original): The analytical device of claim 1, wherein both of said first and second electrodes comprise a palladium metal material.

Claim 8 (original): The analytical device of claim 1, wherein at least one of said first and second electrodes comprises a nickel hydroxide material.

Claim 9 (original): The analytical device of claim 8, wherein said nickel hydroxide material includes a nickel hydroxide compound of the formula $Ni(OH)_x$ wherein x is 2 or 4.

Claim 10 (original): The analytical device of claim 1, wherein both of said first and

second electrodes comprises a nickel hydroxide material.

Claim 11 (original): The analytical device of claim 10, wherein said nickel hydroxide material includes a nickel hydroxide compound of the formula $Ni(OH)_x$ wherein x is 2 or 4.

Claim 12 (currently amended): The analytical device of claim 1, wherein at least one of said first and second electrodes comprises ~~a nickel-cadmium electrode system~~ nickel-cadmium.

Claim 13 (original): The analytical device of claim 1, wherein at least one of said first and second electrodes comprises an ionic liquid.

Claim 14 (original): The analytical device of claim 1, wherein at least one of said first and second electrodes comprises an ionic conductor selected from liquid electrolytes, gels, polymer electrolytes, ceramics, glasses, membranes, and combinations thereof.

Claim 15 (canceled)

Claim 16 (original): The analytical device of claim 1, wherein said sample containment device comprises an electrophoretic device.

Claim 17 (original): The analytical device of claim 1, wherein said sample containment device comprises an electroosmotic device.

Claim 18 (currently amended): The analytical device of claim 1, wherein ~~said electrochemical cell operates in a galvanic mode when~~ said power source polarity inverting device has switched ~~switches~~ the contacts between the terminals, and said electrochemical cell operates in a galvanic mode.

Claim 19 (currently amended): The analytical ~~cell~~ device of claim 1, wherein said power source produces from greater than 5 volts to about 200 volts.

Claim 20 (currently amended): An electrochemical cell comprising:

an anodic reservoir adapted to receive an electrolyte;

a cathodic reservoir adapted to receive an electrolyte;

an electrical connection between said anodic reservoir and said cathodic reservoir for permitting communication of electrolyte from at least one of said reservoirs to the other of said reservoirs;

a first bubble-free hydrogen absorbing electrode having been precharged as a cathode to have hydrogen absorbed therein, and the bubble-free electrode being disposed within one of said anodic reservoirs and said cathodic reservoir;

a second electrode disposed within the other of said anodic reservoir and said cathodic reservoir;

a power source having a positive terminal ~~that is normally~~ in electrical contact with said first electrode, and a negative terminal ~~that is normally~~ in electrical contact with said second electrode; and

a power source polarity inverting device for switching the contacts between the terminals of said power source and said first and second electrodes such that said negative terminal is in electrical contact with said first electrode and said positive terminal is in electrical contact with said second electrode.

Claim 21 (original): The electrochemical cell of claim 20, wherein said second electrode is a bubble-free hydrogen absorbing electrode.

Claim 22 (original): The electrochemical cell of claim 20, wherein at least one of said

first and second electrodes comprises a palladium metal material.

Claim 23 (original): The electrochemical cell of claim 20, wherein both of said first and second electrodes comprise a palladium metal material.

Claim 24 (original): The electrochemical cell of claim 20, wherein at least one of said first and second electrodes comprises a nickel hydroxide material.

Claim 25 (original): The electrochemical cell of claim 24, wherein said nickel hydroxide material includes a nickel hydroxide compound of the formula $Ni(OH)_x$ wherein x is either 2 or 4.

Claim 26 (original): The electrochemical cell of claim 20, wherein both of said first and second electrodes comprises a nickel hydroxide material.

Claim 27 (original): The electrochemical cell of claim 26, wherein said nickel hydroxide material includes a nickel hydroxide compound of the formula $Ni(OH)_x$ wherein x is either 2 or 4.

Claim 28 (currently amended): The electrochemical cell of claim 20, wherein at least one of said first and second electrodes comprises ~~a nickel-cadmium electrode system~~ nickel-cadmium.

Claim 29 (original): The electrochemical cell of claim 20, wherein at least one of said first and second electrodes comprises an ionic liquid.

Claim 30 (original): The electrochemical cell of claim 20, wherein at least one of said first and second electrodes comprises an ionic conductor selected from liquid electrolytes, gels, polymer electrolytes, ceramics, glasses, membranes, and combinations thereof.

Claim 31 (canceled)

Claim 32 (currently amended): The electrochemical cell of claim 20, wherein ~~said electrochemical cell operates in a galvanic mode when~~ said power source polarity inverting device has switched ~~switches~~ the contacts between the terminals, and said electrochemical cell operates in a galvanic mode.

Claim 33 (original): The electrochemical cell of claim 20, wherein said power source produces from greater than 5 volts to about 200 volts.

Claim 34 (original): An analytical device comprising the electrochemical cell of claim 20 and a sample containment device.

Claim 35 (original): The analytical device of claim 34, wherein said sample containment device comprises an electrophoretic device.

Claim 36 (original): The analytical device of claim 34, wherein said sample containment device comprises an electroosmotic device.

Claim 37 (withdrawn): A method of separating at least one component from one or more other components in a sample, said method comprising:

providing the analytical device of claim 1;

loading a sample having multiple components in the sample containment device of the analytical device; and

operating the electrochemical cell of the analytical device to generate a field that affects separation of at least one of the components of the sample from at least one other component in the sample.

Claim 38 (withdrawn): A method of separating at least one component from one or more other components in a sample containing multiple components, said method comprising:

providing an electrochemical cell of claim 20;

operating the electrochemical cell to generate a field; and

using the generated field to affect separation of at least one of the components of the sample from at least one other component in the sample.

Claim 39 (withdrawn): A method of influencing at least one property of at least one component in a sample, said method comprising:

providing the analytical device of claim 1;

loading a sample having a component in the sample containment device of the analytical device; and

operating the electrochemical cell of the analytical device to generate a field that influences at least one property of the component of the sample.

Claim 40 (withdrawn): A method of influencing at least one property of at least one component in a sample, said method comprising:

providing an electrochemical cell of claim 20;

operating the electrochemical cell to generate a field; and

using the generated field to influence at least one property of the component of the sample so as to manipulate the component.

Claim 41 (withdrawn): A method of preparing a bubble-free electrode for bubble-free operation under electrolytic conditions, said method comprising:

providing the analytical device of claim 1 wherein said bubble-free electrode comprises a hydrogen-absorbing material;

actuating said power source polarity inverting device for switching the contacts between the terminals of said power source and said first and second electrodes such that said negative terminal is in electrical contact with said first electrode and said positive terminal is in electrical contact with said second electrode;

pre-charging the bubble-free electrode by operating said electrochemical cell under conditions of reverse polarity relative to normal operation of the cell, said pre-charging being conducted under sufficient electrical conditions and for a sufficient time to produce and store hydrogen at the electrode which operates as an anode under normal operating conditions of the electrochemical cell; and

subsequent to pre-charging, operating the electrochemical cell in a normal mode of operation such that hydrogen stored at the anode reacts with oxygen gas formed at the anode under normal operating conditions to thereby prevent or reduce formation of oxygen gas bubbles at said anode.

Claim 42 (withdrawn): The method of claim 41, wherein said electrode that operates as an anode under normal operating conditions comprises a palladium material.

Claim 43 (withdrawn): A device for separating components of a sample, comprising:

a channel defined at least in part by one or more inner walls;

a flow generating device for generating a flow of flow medium through said channel;

an electrode pair including at least one electrode disposed at or adjacent said one or more

inner walls;

a power supply for supplying said electrode pair with a power supply of sufficient voltage and/or current to form an electric field that extends between the electrode pair in a direction that is transverse to the direction of flow; and

a controller for controlling said power supply to move charged components of said sample in a direction that is transverse to said direction of flow.

Claim 44 (withdrawn): The device of claim 43, wherein said flow generating device is an electrophoretic flow-generating device.

Claim 45 (withdrawn): The device of claim 43, wherein said flow-generating device is a pressure-driven flow-generating device.

Claim 46 (withdrawn): The device of claim 43, wherein said controller controls said power supply so that at least one of said electrodes captures one or more components from said flow.

Claim 47 (withdrawn): The device of claim 43, wherein at least one electrode of said electrode pair is a bubble-free electrode.

Claim 48 (withdrawn): The device of claim 43, wherein both electrodes of said electrode pair are bubble-free electrodes.

Claim 49 (withdrawn): The device of claim 43, further comprising an electrophoretic field-generating pair of second electrodes wherein said second electrodes are disposed at or adjacent opposite ends of said channel, respectively.

Claim 50 (withdrawn): The device of claim 49, wherein at least one of said second

electrodes is a bubble-free electrode.

Claim 51 (withdrawn): The device of claim 49, wherein both of said second electrodes are bubble-free electrodes.

Claim 52 (withdrawn): A method of separating components of a sample, comprising:

providing a channel at least partially defined by one or more inner walls;

causing a flow of flow medium through said channel in a direction of flow, said flow having a flow profile including regions of faster flow and regions of slower flow;

disposing a sample having components to be separated in said channel such that said sample is carried by said flow medium in the direction of flow;

providing an electrode pair and disposing at least one electrode of said pair at or adjacent said one or more inner walls;

supplying said electrode pair with a power supply of sufficient voltage and/or current to form an electric field that extends between the electrode pair in a direction that is transverse to the direction of flow; and

controlling said power supply to move charged components of said sample in a direction that is transverse to said direction of flow to change the position of one or more of said charged components in said flow from a region of a first speed to a region of a second speed that differs from said first speed.

Claim 53 (withdrawn): The method of claim 52, wherein said flow of flow medium is a pressure-driven flow.

Claim 54 (withdrawn): The method of claim 52, wherein at least one electrode of said

electrode pair is a bubble-free electrode.

Claim 55 (withdrawn): The method of claim 52, wherein both electrodes of said electrode pair are bubble-free electrodes.

Claim 56 (withdrawn): A method of separating components of a sample, comprising:

providing a channel at least partially defined by one or more inner walls;

causing a flow of flow medium through said channel in a direction of flow, said flow having a uniformly cross-sectioned flow profile;

disposing a sample having components to be separated in said channel such that said sample is carried by said flow medium in the direction of flow;

providing an electrode pair and disposing at least one electrode of said pair at or adjacent said one or more inner walls;

supplying said electrode pair with a power supply of sufficient voltage and/or current to form an electric field that extends between the electrode pair in a direction that is transverse to the direction of flow; and

controlling said power supply to move charged components of said sample in a direction that is transverse to said direction of flow, and to hold the position of one or more of said charged components in said flow to affect a concentrating of a charged component at an electrode.

Claim 57 (withdrawn): The method of claim 56, further comprising controlling said power supply to capture components at one or both of the electrodes of said electrode pair.

Claim 58 (withdrawn): The method of claim 57, further comprising releasing captured components from one or both electrodes of the electrode pair into the flow.

Claim 59 (withdrawn): The method of claim 56, wherein said flow of flow medium is a pressure-driven flow.

Claim 60 (withdrawn): A sample separation device including an electrochemical cell, said electrochemical cell comprising an electrode that acts as an anode during normal operation of the cell, and an electrode that acts as a cathode during normal operation of the cell, wherein, the cell has been pre-charged such that the normally-operating anode has absorbed hydrogen and can run bubble-free for a period of time under normal electrolytic operating conditions.

Claim 61 (withdrawn): The device of claim 60, wherein said electrode that acts as an anode during normal operation of the device does not generate oxygen bubbles visible to the naked eye under conditions of a current density held at about 72 A/m^2 for about 1.0 second in a degassed solution under conditions of ready-nucleation.

Claim 62 (withdrawn): A palladium anode that does not generate oxygen bubbles visible to the naked eye under conditions of a current density held at 72 A/m^2 for one second in a degassed solution under conditions of ready-nucleation.

Claim 63 (withdrawn): An electrochemical cell including the palladium anode of claim 62.

Claim 64 (withdrawn): A sample separation device including the electrode of claim 62.

Claim 65 (withdrawn): An electrophoretic device including the palladium anode of claim

62.

Claim 66 (withdrawn): An analytical device comprising:

a flow pathway;

a flow manipulating cell adjacent said flow pathway, said flow manipulating cell including a confined reservoir, an exit port in communication with the reservoir, and a pressure generating electrode in said reservoir, said pressure generating electrode generating gas bubbles within said reservoir for increasing pressure within the cell; and

a pressure relief pathway in communication with said flow pathway for affecting a flow through said flow pathway.

Claim 67 (withdrawn): The analytical device of claim 66, wherein said pressure-generating electrode is a palladium electrode.

Claim 68 (withdrawn): The analytical device of claim 66, wherein said pressure-generating electrode is a palladium anode that runs bubble-free for a time period of at least about 1.0 second when held at a current density of about 72 A/m^2 in a previously degassed solution under conditions of ready-nucleation.

Claim 69 (withdrawn): The analytical device of claim 66, wherein said flow pathway includes an electrophoretic separation channel.

Claim 70 (withdrawn): The analytical device of claim 66, wherein said exit port includes a frangible seal.

Claim 71 (withdrawn): The analytical device of claim 70, wherein said frangible seal is heat-meltable and in communication with a heating element.

Amendments to the Drawings:

An attached sheet of drawings includes changes to Fig. 9. This sheet, which includes Fig. 9, replaces the original sheet including Fig. 9. In Fig. 9, previous element **810** has been changed to **850** and element **812** has been changed to **852**. Another attached sheet of drawings includes changes to Fig. 19. This sheet, which includes Figs. 17-19, replaces the original sheet including Figs. 17-19. In Fig. 19, electrical system **108'** has been identified.

Attachments: Two (2) Replacement Sheets
Two (2) Annotated Sheets Showing Changes